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## Single-Molecule Kinetics of $\lambda$ Exonuclease Reveal Base Dependence and Dynamic Disorder

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*Published in:*  
 Science

*DOI:*  
[10.1126/science.1084387](https://doi.org/10.1126/science.1084387)

**IMPORTANT NOTE:** You are advised to consult the publisher's version (publisher's PDF) if you wish to cite from it. Please check the document version below.

*Document Version*  
 Publisher's PDF, also known as Version of record

*Publication date:*  
 2003

[Link to publication in University of Groningen/UMCG research database](#)

### *Citation for published version (APA):*

Oijen, A. M. V., Blainey, P. C., Crampton, D. J., Richardson, C. C., Ellenberger, T., & Xie, X. S. (2003). Single-Molecule Kinetics of  $\lambda$  Exonuclease Reveal Base Dependence and Dynamic Disorder. *Science*, 301(5637), 1235-1238. <https://doi.org/10.1126/science.1084387>

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### Movie S1

Display of movement of tethered beads as a result of enzymatic conversion of their DNA tether from double-stranded to single-stranded DNA. Of the five beads shown, one shows enzymatic activity directly after introducing the enzyme (start of movie). After ~ 600 seconds (one-third of the movie), the enzymatic activity terminates due to dissociation of the  $\lambda$  exonuclease from the DNA. At this point, enzyme is again introduced into the flow cell, after which three beads show movement. Only every 20<sup>th</sup> acquired frame is shown. The image size corresponds to  $\sim 40 \times \sim 30 \mu\text{m}^2$ ; the total time displayed in the movie is 2000 seconds.